AMENDMENT

In the Claims:

1. (Original): A convergence system for translating data received in an ATM format into a MAC format, the convergence system comprising:

a network connection provisioning module configured to grant or reject requests for a communication channel connection, which upon granting a connection selects a compression method, from a plurality of selectable compression methods, at least some of which include mapping ATM cell addressing bits into MAC packet addressing fields;

an ATM segmentation module configured to buffer data which is incoming on the granted connection and to provide portions of the data to other modules, the portions provided depending upon the selected compression method;

a MAC header module configured to derive a header for a MAC packet from data in one or more incoming ATM cells having a common destination in combination with connection parameters including any selected header compression methods; and

a MAC reassembly module configured to format data from the ATM segmentation module and the MAC header module into an outgoing MAC data packet having a header and a payload which represents incoming data from one or more ATM cells sharing a common destination.

2. (Original): The convergence system of claim 1 wherein for at least one of the selectable compression methods the MAC reassembly module is further configured to include payload data of a plurality of ATM cells sharing a common destination in the payload of the outgoing MAC data packet and to remove any ATM header addressing data therefrom.

3. (Original): The convergence system of claim 1 wherein for at least one of the selectable compression methods the MAC reassembly module is further configured to include payload data of a plurality of ATM cells sharing a common destination in

the payload of the outgoing MAC data packet and to remove all ATM header data therefrom.

4. (Original): The convergence system of claim 1 wherein for at least one of the selectable compression methods the MAC reassembly module is further configured to include payload data of a plurality of ATM cells sharing a common destination, and to encapsulate a fraction of ATM header addressing data from each of the plurality of ATM cells in the payload of the outgoing MAC data packet.

5. (previously presented): The convergence system of claim 4 wherein for at least one of the selectable compression methods the MAC reassembly module is further configured to include payload data of a plurality of ATM cells sharing a common destination and to encapsulate a virtual connection identifier from the header of each of the plurality of ATM cells along with the ATM payload data.

6. (Original): The convergence system of claim 1 wherein for at least one of the selectable compression methods the ATM segmentation module is further configured to remove padding from an ATM trailer cell payload, and subsequently to provide payload data from the trailer cell to the MAC reassembly module.

7. (Original): The convergence system of claim 1 wherein for at least one of the selectable compression methods the ATM segmentation module removes padding and also CPCS and SSCS bytes from an ATM trailer cell payload prior to providing payload data from the trailer cell to the MAC reassembly module.

8. (Original): The convergence system of claim 1 wherein for at least one of the selectable compression methods the ATM segmentation module removes padding from an ATM trailer cell payload and adding a padding pattern byte representative of a pattern of the padding removed prior to providing payload data from the trailer cell to the MAC reassembly module.

9. (Original): A method for compressing and converting data packets initially in a first fixed-length packet format which are being converted to a second packet format

prior to transmission through a link, the initial data packets each including a header containing overhead data added by a communication system, the method comprising the steps of:

obtaining a plurality of incoming packets formatted in the first fixed-length format and having common header addressing data;

preparing a second-format packet to convey payload data from the plurality of incoming packets by

mapping the common addressing data into a header of the second-format packet,

entering payload data from the plurality of incoming packets into a payload section of the second-format packet, and

omitting the common addressing data from the payload of the second-format packet.

10. (Original): The method for compressing and converting data packets of claim 9 wherein the common addressing data includes all of the first-format header addressing data.

11. (Original): The method for compressing and converting data packets of claim 9 wherein the entire first-format header is mapped into the second-format header, and the entire first-format header is omitted from the second-format payload.

12. (Original): The method for compressing and converting data packets of claim 9 wherein a fraction of the first-format header addressing data of the incoming first-format packets is not common, and that fraction from each incoming packet is encapsulated with payload data from the incoming packet to form part of a payload of the second-format packets.

13. (Original): The method for compressing and converting data packets of claim 12 wherein the first-format packets are ATM cells, the second-format packets are MAC packets, and the fraction of each ATM cell header which is encapsulated with payload data from the ATM cell is a virtual connection identifier.

14. (Original): The method for compressing and converting data packets of claim 9 wherein a fraction of the first-format header addressing data of the incoming first-format packets which is common is disposed one place within the second-format packet.

15. (Original): The method for compressing and converting data packets of claim 14 wherein the first-format packets are ATM cells and the second-format packets are MAC packets.

16. (Original): The method for compressing and converting data packets of claim 9 including a further step of removing padding data from a trailer packet of the plurality of first-format packets.

17. (Original): The method for compressing and converting data packets of claim 16 wherein the first-format packets are ATM cells, the second-format packets are MAC packets, the trailer packet is at ATM trailer cell containing and end-of-message indication, and including the further step of removing CPCS and SSCS bytes from the ATM trailer cell.

18. (Previously Presented): A method for compressing data packets which are initially in a first fixed-length packet format and are being converted to a second packet format prior to transmission through a link, the initial data packets each including user data intended for an end user and a header containing overhead data added by a communication system which is not intended for delivery to an end user, the method comprising the steps of:

obtaining one or more incoming packets formatted in the first fixed-length format, each of the incoming packets having an identical first format header comprising first-format overhead data;

preparing a second-format packet to convey data from the one or more incoming packets by

(a) mapping the first-format header overhead data into a header of the second-format packet;

(b) representing all user data from the one or more first-format packets in a payload of the second-format packet; and

(c) omitting from the second-format payload all first-format header overhead data mapped into the second-format packet header of the second-format packet.

19. (Original): The method for compressing data packets of claim 18 including the further steps of obtaining a first-format trailer data packet having a header identical to the headers of the one or more incoming packets except for a field indicating that the trailer packet is a last packet of a block of packets having a common destination, the trailer packet including a payload having user data and overhead padding bytes;

including the user data from the trailer packet payload with payload data from the one or more first-format packets in the second-format payload, and

omitting at least some of the padding bytes from the second-format payload.

20. (Previously Presented): The method for compressing data packets of claim 19 wherein the second-format data packets are MAC packets, the first-format data packets are ATM cells, and the trailer packet is an ATM trailer cell which includes CPCS and SSCS bytes; and wherein

all padding bytes are omitted from the MAC packet, and the CPCS and SSCS bytes from the ATM trailer cell are omitted from the MAC packet.

21. (Previously Presented): An apparatus for communicating data between a plurality of users and a network, the apparatus comprising one or more base stations, each base station including

a network connection accepting incoming data in packets from a wide area network in a first-packet format, the first-packet format being a fixed-length format;

a translation controller which reduces data from headers or from trailers of the incoming packets in a process of translating the incoming data into a second packet format, the second packet format being a variable length format;

a transmission unit having a plurality of directional antennas, each antenna sending and receiving radiofrequency communications with a plurality of associated

users within a directional sector served by the antenna, each user having customer premise equipment complementary to the transmission unit;

a transmission controller for directing transmission of data signals to each user; and

data receiving apparatus associated with each user, the data receiving apparatus:

receiving the transmitted data signals,

decoding the received data signals into received data having the second packet format,

reconstructing the received data into the first packet format, and checking the reconstructed data for errors.

22. (Previously Presented): A method for compressing composite data formatted in ATM cells prior to transmission over a broadband wireless link, the composite data including user data intended for communication to an end user and overhead data not intended for communication to the end user, the method comprising the steps of:

obtaining incoming composite data in a plurality of ATM cells to form header-reduced cell data;

removing ATM cell header overhead data common to the plurality of ATM cells from one or more of the plurality of ATM cells to form header-reduced cell data;

identifying padding bytes added to an ATM trailer cell which are overhead data;

removing the padding bytes from the ATM trailer cell;

adding an indication of the number of data bytes retained from the ATM trailer cell;

concatenating representations of the header-reduced cell data from the one or more of the plurality of ATM cells and a representation of the retained trailer cell data bytes to form a payload of a variable-length transmission packet.

23. (Original): A method for compressing data packets which are initially in a first fixed-length packet format and are being converted to a second packet format prior to transmission through a link, the initial data packets each including a header containing overhead data added by a communication system, the method comprising the steps of:

determining, during setup of a particular packet block transfer, whether virtual path or virtual connection switching is required for the particular packet block transfer;

obtaining a plurality of incoming packets formatted in the first fixed-length format, each of the incoming packets having identical headers and constituting at least part of the particular packet block transfer;

preparing a second-format packet to convey data from the plurality of incoming packets by selecting, dependent upon the type of switching required as established during block transfer setup; either

(a) mapping all header data from one of the first-format packet headers into the second-format header, adding data reflective of all user data in the first-format packets to a payload of the second-format packet, and omitting all first-format header data from the payload of the second-format packet, or

(b) mapping a portion of header data from one of the first-format packet headers into the second-format header, omitting the mapped portion of header data from other parts of the second-format packet, and placing data reflecting remaining first-format header data along with payload data from each of the incoming packets into a payload section of the second-format header.

24. (Previously Presented): The apparatus of claim 21, wherein a plurality of the the incoming packets formatted in the first fixed-the first-packet format have a common destination and each comprise a header comprising identical first-format overhead data, and wherein the translator controller is capable of preparing a second-format packet to convey data in the incoming packets having the common destination by:

(d) mapping the first-format overhead data into a header of a packet formatted according to the second packet format;

(e) representing all user data from the one or more incoming packets having the common destination in a payload of the packet formatted according to the second packet format; and

(f) omitting from the payload first-format overhead data mapped into the header of the packet formatted according to the second packet format.

25. (Previuously Presented): The apparatus of claim 24, wherein the plurality of incoming packets comprises a trailer packet, the trailer packet including a payload having user data and overhead padding bytes, the trailer packet including a header with a field indicating that the trailer packet is a last packet among a block of packets having the common destination, and wherein the translator controller is further capable of

including the user data from the trailer packet payload with payload of the packet formatted according to the second packet format, and

omitting at least some of the padding bytes from the packet formatted according to the second packet format.

26. (Previously Presented): The apparatus of claim 25, wherein the packet formatted according to the second packet format is a MAC packet, the incoming packets are ATM cells, and the trailer packet is an ATM trailer cell which includes CPCS and SSCS bytes; and wherein all padding cells are omitted from the MAC packet, and the CPCS and SSCS bytes from the ATM trailer cell are omitted from the MAC packet.

27. (new) A method comprising:

receiving data in a plurality of first-format packets comprising common header addressing data and formatted according to a first format, the first format being a fixed length format;

mapping at least some of said common addressing data to one or more fields of a second-format packet;

combining payload data of said first-format packets in a payload of said second-format packet; and

omitting redundant common addressing data from said payload of said second-format packet.

28. (new) The method of claim 27, wherein said first format comprises a fixed-length packet format and said second-format packet is formatted according to a variable length packet format.

29. (new) The method of claim 27, wherein said plurality of first-format packets comprise ATM cells.

30. (new) The method of claim 29, wherein said ATM cells comprise an ATM trailer, said ATM trailer comprises a payload comprising user data and overhead padding bytes, and further comprising:

including said user data in said payload of said second-format packet; and

omitting at least a portion of said padding from said payload of said second-format packet.

31. (new) The method of claim 29, and further comprising omitting from said payload of said second-format packet one or more of padding, CPCS bytes and/or SSCS bytes of an ATM trailer cell among said received packets.

32. (new) The method of claim 29, and further comprising:

omitting from said payload of said second-format packet padding of an ATM trailer cell among said received packets; and

including in said payload of said second-format packet a padding pattern byte representative of said omitted packet padding

33. (new) The method of claim 27, wherein said second-format packet comprises a MAC packet, and further comprising deriving a MAC header for said MAC packet based, at least in part, on said common header addressing data.

34. (new) The method of claim 27, and further comprising:

receiving a request for a communication channel connection;

selecting a compression process from among a plurality of compression processes upon grant of said received request; and

performing said mapping and said combining based, at least in part, upon said selected compression process.

35. (new) The method of claim 27, and further comprising including at least a portion of said common addressing data in said payload of said second-format packet.

36. (new) The method of claim 27, wherein said first-format packets comprise a first-format packet header, and further comprising:

mapping said first-format packet header to a header of said second-format packet; and

omitting said first-format packet header from said payload of said second-format packet.

37. (new) The method of claim 27, and further comprising

receiving at least some non-common addressing data in said received first-format packets; and

encapsulating at least a portion of said non-common addressing data in said payload of said second-format packet.

38. (new) The method of claim 27, and further comprising disposing a portion of first-format header addressing data common to said incoming packets in a single field of said second-format packet.

39. (new) The method of claim 27, and further comprising:

receiving at one or more directional antennas signals transmitted from one or more subscribers;

decoding said received signals into received data having said second-packet format; and

reformatting said received data having said second-packet format into data having said first-packet format.

40. (new) The method of claim 27, wherein said plurality of first-format packets constitute at least a portion of a packet block transfer over a communication channel, and further comprising:

determining whether said communication channel is provisioned for virtual path switching or virtual connection switching for transmission of said block transfer;

mapping all header data from one of said first-format packet headers into a header portion of said second-format packet, adding data reflective of user data in said first-format packets to said payload of said second-format packet, and omitting all first-format header data from the payload of the second-format packet if said communication channel is provisioned for virtual connection switching; and

mapping a portion of header data from one of said first-format packet headers into a header of said second-format packet, omitting said mapped portion of header data from other portions of said second-format packet, and placing data reflecting remaining first-format header data along with payload data from at least some of said incoming packets into said payload of said second-format packet if said communication channel is provisioned for virtual path switching.

41. (new) An apparatus comprising:

means for receiving data in a plurality of first-format packets comprising common header addressing data and formatted according to a first format, the first format being a fixed length format;

means for mapping at least some of said common addressing data to one or more fields of a second-format packet;

means for combining payload data of said first-format packets in a payload of said second-format packet; and

means for omitting redundant common addressing data from said payload of said second-format packet.

42. (new) The apparatus of claim 41, wherein said first format comprises a fixed-length packet format and said second-format packet is formatted according to a variable length packet format.

43. (new) The apparatus of claim 41, wherein said plurality of first-format packets comprise ATM cells.

44. (new) The apparatus of claim 43, wherein said ATM cells comprise an ATM trailer, said ATM trailer comprises a payload comprising user data and overhead padding bytes, and further comprising:

means for including said user data in said payload of said second-format packet; and

means for omitting at least a portion of said padding from said payload of said second-format packet.

45. (new) The apparatus of claim 43, and further comprising means for omitting from said payload of said second-format packet one or more of padding, CPCS bytes and/or SSCS bytes of an ATM trailer cell among said received packets.

46. (new) The apparatus of claim 43, and further comprising:

means for omitting from said payload of said second-format packet padding of an ATM trailer cell among said received packets; and

means for including in said payload of said second-format packet a padding pattern byte representative of said omitted packet padding.

47. (new) The apparatus of claim 41, wherein said second-format packet comprises a MAC packet, and further comprising means for deriving a MAC header for said MAC packet based, at least in part, on said common header addressing data.

48. (new) The apparatus of claim 41, and further comprising:

means for receiving request for a communication channel connection;

means for selecting a compression process from among a plurality of compression processes upon grant of said received request; and

means for performing said mapping and said combining based, at least in part, upon said selected compression process.

49. (new) The apparatus of claim 41, and further comprising means for including at least a portion of said common addressing data in said payload of said second-format packet.

50. (new) The apparatus of claim 41, wherein said first-format packets comprise a first-format packet header, and further comprising:

means for mapping said first-format packet header to a header of said second-format packet; and

means for omitting said first-format packet header from said payload of said second-format packet.

51. (new) The apparatus of claim 41, and further comprising

means for receiving at least some non-common addressing data in said received first-format packets; and

means for encapsulating at least a portion of said non-common addressing data in said payload of said second-format packet.

52. (new) The apparatus of claim 41, and further comprising means for disposing a portion of first-format header addressing data common to said incoming packets in a single field of said second-format packet.

53. (new) The apparatus of claim 41, and further comprising:

means for receiving at one or more directional antennas signals transmitted from one or more subscribers;

means for decoding said received signals into received data having said second-packet format; and

means for reformatting said received data having said second-packet format into data having said first-packet format.

54. (new) The apparatus of claim 41, wherein said plurality of first-format packets constitute at least a portion of a packet block transfer over a communication channel, and further comprising:

means for determining whether said communication channel is provisioned for virtual path switching or virtual connection switching for transmission of said block transfer;

means for mapping all header data from one of said first-format packet headers into a header portion of said second-format packet, adding data reflective of user data in said first-format packets to said payload of said second-format packet, and omitting all first-format header data from the payload of the second-format packet if said communication channel is provisioned for virtual connection switching; and

means for mapping a portion of header data from one of said first-format packet headers into a header of said second-format packet, omitting said mapped portion of header data from other portions of said second-format packet, and placing data reflecting remaining first-format header data along with payload data from at least some of said incoming packets into said payload second of said second-format packet if said communication channel is provisioned for virtual path switching.

55. (new) A system comprising:

one or more base stations comprising:

a segmentation module adapted to buffer data received in a plurality of first-format packets comprising common header addressing data and formatted according to a first format, said first format being a fixed length format;

a MAC module adapted to:

map at least some of said common addressing data to one or more fields of a second-format packet;

combine payload data of said first-format packets in a payload of said second-format packet; and

omit redundant common addressing data from said payload of said second-format packet; and

a radio frequency transmitter to transmit said second-format packet encoded in a radio frequency signal; and

one or more customer premises equipment (CPE) stations comprising:

a radio frequency receiver to receive the radio frequency signal; and

a decoder to decode at least a portion of said second-format packet based, at least in part, on said received radio frequency signal.

56. (new) The system of claim 55, the system further comprising a back-haul connection coupled to the one or more base stations to provide one or more of the CPE stations with access to an Internet service.

57. (new) The system of claim 55, wherein the system further comprises a video server capable of providing a video service to at least one of said CPE stations.

58. (new) The system of claim 55, wherein the system further comprises at least one residential gateway coupled to one of said CPE stations.

59. (new) The system of claim 58, wherein the system further comprises at least one ATM switch coupled to segmentation module to provide at least one ATM service to one or more of the CPE stations.

60. (new) The system of claim 59, wherein the ATM switch is capable of providing at least one of a video service, a voice service and/or a data service to said one or more of the CPE stations.

61. (new) The system of claim 55, wherein said system further comprises a sectored active antenna array coupled to said radio frequency transmitter.

62. (new) The system of claim 55, wherein said first format comprises a fixed-length packet format and said second-format packet is formatted according to a variable length packet format.

63. (new) The system of claim 55, wherein said plurality of first-format packets comprise ATM cells.

64. (new) The system of claim 63, wherein said ATM cells comprise an ATM trailer, said ATM trailer comprises a payload comprising user data and overhead padding bytes, and wherein said MAC module is further adapted to:

include said user data in said payload of said second-format packet; and

omit at least a portion of said padding from said payload of said second-format packet.

65. (new) The system of claim 63, wherein said MAC module is further adapted to omit from said payload of said second-format packet one or more of padding, CPCS bytes and/or SSCS bytes of an ATM trailer cell among said received packets.

66. (new) The system of claim 63, wherein said MAC module is further adapted to:

omit from said payload of said second-format packet padding of an ATM trailer cell among said received packets; and

include in said payload of said second-format packet a padding pattern byte representative of said omitted packet padding

67. (new) The system of claim 55, wherein said second-format packet comprises a MAC packet, and wherein said MAC module is further adapted to derive a MAC header for said MAC packet based, at least in part, on said common header addressing data.

68. (new) The system of claim 55, wherein said MAC module is further adapted to include at least a portion of said common addressing data in said payload of said second-format packet.

69. (new) The system of claim 55, wherein said first-format packets comprise a first-format packet header, and wherein said MAC module is further adapted to:

map said first-format packet header to a header of said second-format packet; and

omit said first-format packet header from said payload of said second-format packet.

70. (new) The system of claim 55, wherein said first-format packets at least some non-common addressing data, and wherein said MAC module is further adapted

to encapsulate at least a portion of said non-common addressing data in said payload of said second-format packet.

71. (new) The system of claim 55, wherein said MAC module is further adapted to dispose a portion of first-format header addressing data common to said incoming packets in a single field of said second-format packet.

72. (new) The system of claim 55, wherein said plurality of first-format packets constitute at least a portion of a packet block transfer over a communication channel, and wherein said MAC module is further adapted to:

map all header data from one of said first-format packet headers into a header portion of said second-format packet, include data reflective of user data in said first-format packets to said payload of said second-format packet, and omit all first-format header data from the payload of the second-format packet if said communication channel is provisioned for virtual connection switching; and

map a portion of header data from one of said first-format packet headers into a header of said second-format packet, omit said mapped portion of header data from other portions of said second-format packet, and place data reflecting remaining first-format header data along with payload data from at least some of said incoming packets into said payload second of said second-format packet if said communication channel is provisioned for virtual path switching.